There is a wealth of software programs available for citizens band-like chatting over the Internet.

The Internet Comes A-Calling

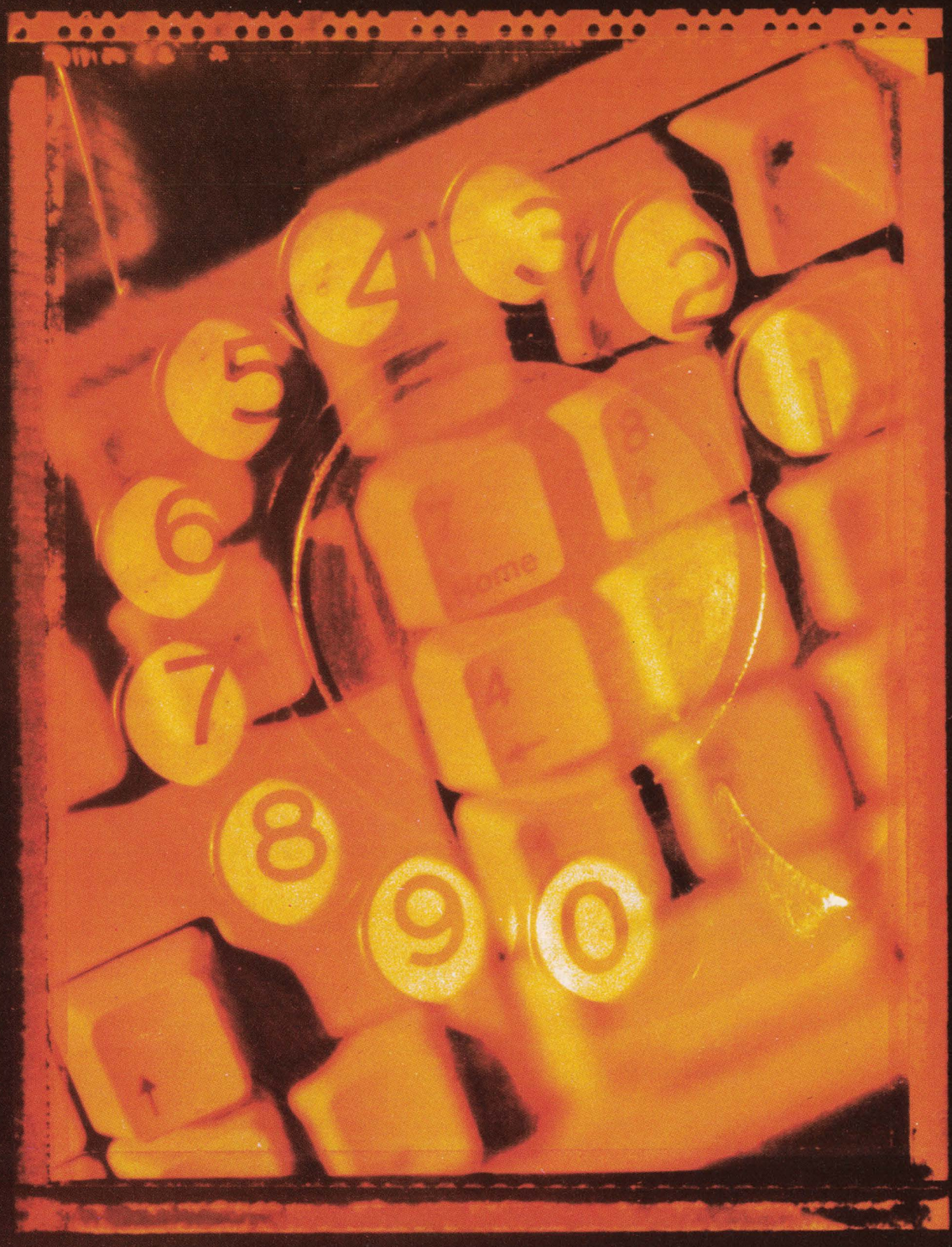
The phone companies are getting nervous, but is there a reason for them to be? Here's a look at what's available to turn your computer into a relatively free phone.

ALEXANDER GRAHAM BELL INVENTED THE TELEPHONE IN 1875, but it wasn't until a few months later—March 10, 1876—when he uttered that famous phrase, "Mr. Watson, come here, I want you" into the magic box that would forever change the way we communicate. More than 120 years have passed since, and the telephone is a staple of life in most of the world.

For many Internet users, electronic mail has all but replaced the post office: Signing a letter, addressing an envelope and waiting days for a reply seems archaic compared to firing off an e-mail message. Like letter writing, it's possible that the power of telephone may one day wane in favor of the Internet.

Illustration: Ed Holub

By Kevin M. Savetz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It seems like 1996 was the year of the Internet phone. This past year, dozens of programs have become available that let you communicate with others via the Net using your voice instead of your overworked fingers. Like the first years of Bell's original telephone, talking on the Internet is more of a curiosity than a necessity, and the sound quality can be more like a cheap transistor radio than the hear-a-pin-drop quietude that the phone companies can deliver. But for thousands of experimenters, hobbyists and cheapskates, Internet telephony is a glimpse of tomorrow's technology, today.

Although there are numerous programs that will let you reach out and touch someone with your computer, most work in a similar fashion: Log on to the Net with your multimedia computer, call Uncle Moe by entering his IP number (the Internet "address" of his computer, instead of his phone number) and wait for him to answer. When he does, just speak into your computer's microphone. On the receiving end of the call, Uncle Moe will hear his computer "ring," indicating an incoming call. He glances at the screen, and the "caller ID" indicates that it's his favorite nephew. He clicks "answer" and hears the melodious sound of your voice flow through his computer speakers.

This will work whether Moe lives just down the street or on the other side of the planet—as long as both you and he have Internet access, you're a "local" call. This is a key fact that makes Internet telephony attractive: You connect to your local Internet provider, Moe connects to his local provider, and—just like long-distance e-mail—the Internet takes care of bridging the in-between distance at no extra cost.

Maybe your Uncle Moe doesn't have a computer, much less an Internet connection. If you've dabbled with citizens band (CB) or ham radio, Internet phone calls should appeal to you, too. Many phone programs enable you to access a directory of other people who are currently online and willing to chat, making it simple to start a friendly conversation with a complete stranger. This brings popular online talk tools, like Internet Relay Chat, to a whole new level.

Can You Help Me Place This Call?

In order to chat with Uncle Moe or anyone else, you'll both need audioconferencing software. There are more than two dozen Internet telephony clients—commercial software, freeware and shareware. Audioconferencing programs work by digitizing your speech, compressing it for a quicker journey and sending the digital data over the Internet. The person you're talking to must have compatible software, which decompresses the data and plays your voice out of the computer's speaker.

***WebPhone* has an interface with the look of a sleek cellular phone.**

Unfortunately, not all of the programs can communicate with each other. There are a variety of methods for encoding and compressing sound data, and as you might expect, the standards aren't necessarily very standard, yet. For applications to be compatible, they need to have the same type of compression scheme, use the same transport protocol and a common directory system.

So, if you use *DigiPhone*, and Uncle Moe uses (the similarly named but very different animal) *Internet Phone*, you won't be able to talk to each other. Things get even more interesting if you use a Mac, but Moe is a die-hard Windows user—only a few programs can bridge that platform gap.

The main companies with the power to influence standards are VocalTec, Netscape and Microsoft. Netscape and Microsoft have pledged to support a cross-platform standard for sound compression and transport, but VocalTec's software is a closed system that does not communicate with other software.

However, because of these differences, various programs can offer different features that go beyond plain vanilla telephone service—for instance, *Speak Freely* offers voice mail, *Microsoft NetMeeting* allows conference calling (so you and Uncle Moe and Aunt Zelda can all rap together) and *PGPfone* encrypts your conversation for added privacy.

The Internet and Conventional Telephones

So, if you can talk anywhere in the world for only the cost of an Internet connection, you might think that the long-distance phone companies are going to do all they can to stop Internet telephony—and you would be half right. The large telephone companies are actually embracing Internet telephony. Those same companies sell high-speed Internet feeds to Internet service providers, and more Net phone users means more bandwidth will be needed—a win-win situation for the phone companies.

Some smaller phone companies aren't so pleased with the Internet telephony trend. A group of 130 telecommunications companies, called the America's Carriers Telecommunication Association, has asked the Federal Communications Commission to stop companies from selling products that enable the use of the Internet for long-distance voice communication. It submits that it is not "in the public interest to permit long-distance service to be given away... nor is it in the public interest for these select telecommunications carriers to operate outside the regulatory requirements applicable to all other carriers." For more information, visit the VONYES Coalition Home Page at **http://www.von.com/vonyes**.

Internet telephony is not likely to replace the telephone—at least not until everyone, including your reclusive Aunt Zelda, has an Internet connection and a computer. In the meantime, you may still be able to call her up for free using your computer. The Free World DialUp project is an experiment that is trying to bridge Internet phones and conventional phones. It allows Internet-connected PC users to dial and speak with standard phone customers in certain cities without long-distance charges.

Special Internet phone "bridges" have been set up in various global cities. If you want to talk with someone who doesn't use the Internet (but does have a telephone) in one of those cities, you can call the bridge via the Internet. The bridge then takes care of making the local call to your Aunt Zelda, linking the two of you through a mixture of the two networks.

The experimental service is still in beta test, but when it's released it will be offered to the public for free. For more information, visit **http://www.pulver.com/fwd**.

Future Views

What's in store for Internet users with regards to Net-phone software is still up in the air—there's no doubt that what we've seen so far just scratches the surface with the technology. It seems that, aside from a continued growth of the computer's usage in homes, a Netphone standard would go a long way to furthering the acceptance of the process. As it is now, you can pick up a phone and call any other phone in the world, without risk of incompatibilities. You don't have that freedom "phoning" someone via the Internet.

Still, in its infancy, Internet Telephony has shown the power of the Internet not only in bridging people together, but also demonstrating that perhaps traditional phone networks cost too darn much for its users. It'll be interesting to see how Net-phone software grows, but also if the threat of competition to the phone companies brings about any change in our cost of reaching out and touching someone.

SOFTWARE TALK: A SURVEY OF NET PHONE PROGRAMS

Here's a brief list of several popular Internet telephony programs. For more information, a complete guide to Internet telephony can be found at the Internet Telephony page at http://rpcp.mit.edu/~asears/main.html. Also, check out the Voice on Net home page at http://www.von.com.

CoolTalk (Windows)
http://live.netscape.com/

Netscape is now packaging this telephony client with version 3.0 of its browser. The client includes a "whiteboard," text chatting, voice mail and other advanced features. The sound quality needs some work and its interface for text chat is poor, but the application has potential. With Netscape's browser being used on over 30 million computers, it's likely that *CoolTalk* will quickly become the most popular Internet telephony application available. Although Netscape has pledged to support open protocols, *CoolTalk* is not yet interoperable with other applications.

DigiPhone and DigiPhone Deluxe (Windows)
http://www.planeteers.com/

The reviews on the Net about this product are all over the board—some love it, but many who have tried the current version have said that the sound quality is unacceptably poor.

E-Phone (Macintosh)
http://www.planeteers.com/digifone/ephone.htm

Formerly called *NetPhone, E-Phone* is one of the best audioconferencing tools for the Macintosh. It offers several compression settings, so it will work well even over slower modem connections. *E-Phone* can also talk to users using the UNIX "vat" communications program.

Intel Internet Phone (Windows 95)
http://www.intel.com/iaweb/cpc/iphone/index.htm

Intel Internet Phone's claim to fame is its ability to talk with a wide variety of other phone applications. You can talk to your friends and family while you surf the Net, play games together or exchange photos using the *Intel Internet Phone* companion application, *Storm EasyPhoto Net.*

Internet Phone (Macintosh and Windows)
http://www.vocaltec.com/

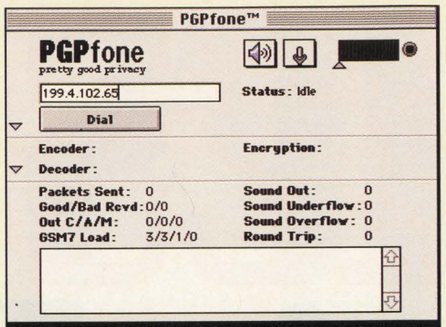
Internet Phone runs on top of Internet Relay Chat (IRC), providing you with a list of online users and topics of conversation, making it easy to find new people to chat with. Its proprietary compression scheme makes it impossible for it to be compatible with other applications.

Maven (Macintosh)
ftp://sunsite.unc.edu/pub/packages/infosystems/maven

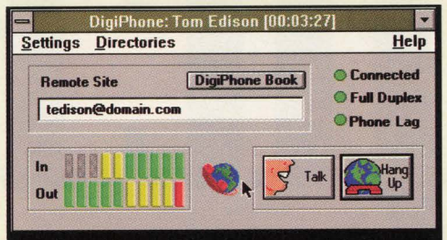
Maven was the first Internet audio-conferencing tool for Macintosh. *Maven* is free software that can talk to other Macs running *Maven*, as well as the UNIX "vat" program.

Microsoft NetMeeting (Windows)
http://www.microsoft.com/ie/conf/

NetMeeting includes many advanced features such as text chat, "whiteboard," file transfer and is set up to make large conferences easy to use. One of its most useful features is that it allows application sharing, where one user can take control of the other user's computer and "see" its applications. The software is rough around the edges, but it has potential.



Added privacy in your conversations is what *PGPfone's* data encryption offers you.



***DigiPhone* reviews are mixed, with strong opinion that its audio quality needs work.**

***TS Intercom* enables you to display a picture of yourself to other users.**

PGPfone (Macintosh and Windows 95)
http://web.mit.edu/network/pgpfone/

From the makers of the *PGP (Pretty Good Privacy)* encryption scheme, freeware *PGPfone* offers audio encryption over the Internet. The encryption scheme used in the application is only available in the United States.

PowWow (Windows)
http://www.tribal.com/

Providing delayed voice communication, it's one of the better personal communications applications. If its voice communications were improved to support real-time communication, *PowWow* would easily be one of the best applications available. The goal of Tribal Voice is to spread the Native-American culture through the Internet.

Speak Freely (Windows and UNIX)
http://www.fourmilab.ch/netfone/windows/speak_freely.html

Speak Freely is one of the best applications available. It offers voice mail, encryption and usually offers excellent sound quality.

TeleVox (Windows and UNIX)
http://www.voxware.com/tvoxdown.htm

Televox offers such useful features as a good user directory, text chatting and user-to-user file transfers. A free program, *TeleVox* enables you to change the way your voice sounds using "voice fonts." It provides excellent sound quality.

TS Intercom (Windows)
http://www.telescape.com/

Although *TS* does not have a user directory, it does allow integration with your e-mail and file-transfer programs, and you can display a picture of yourself for other users to see.

WebPhone (Windows)
http://www.itelco.com/

WebPhone offers users a slick interface that looks like a cellular phone, and provides advanced features such as voice mail, WWW integration, multiple lines for simultaneous calls, a message board for text communications and a user directory.

Webtalk (Windows)
http://webtalk.quarterdeck.com/

Webtalk offers good integration with the World Wide Web, and provides good sound quality. Other features include a message board for text and a user directory.—***K.S.***